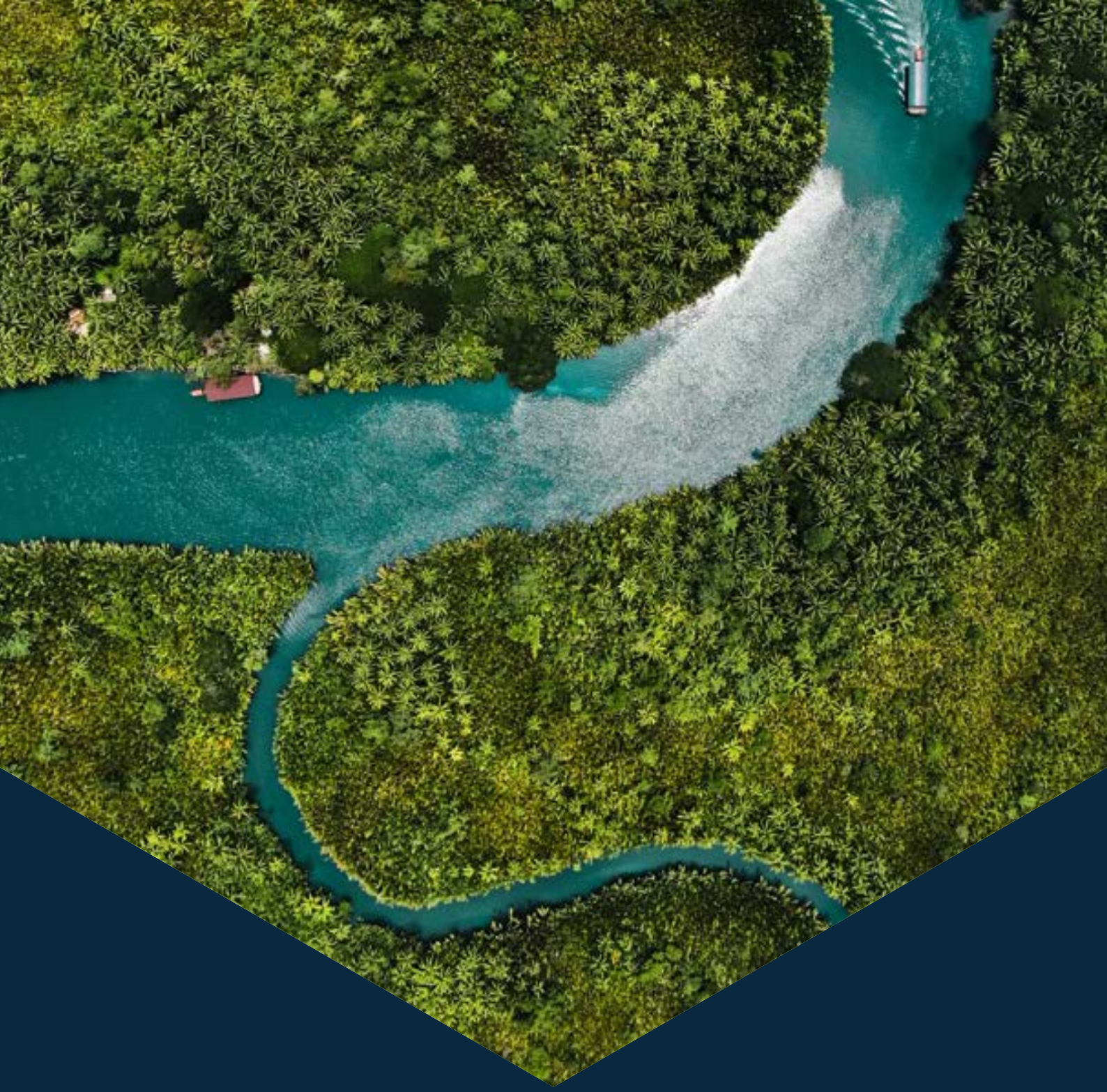

Forest IQ: A Gateway to TNFD Adoption

A study undertaken by Frontierra for the Zoological Society of London

Forest IQ

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“Actionable insights for TNFD-aligned deforestation risk management”

Executive Summary

This report demonstrates how Forest IQ can be used by financial institutions to undertake the Locate, Evaluate, Assess and Prepare (LEAP) approach of the Taskforce on Nature-related Financial Disclosures (TNFD).

Though Forest IQ is focused on deforestation, ecosystem conversion and associated human rights abuses, the information and data available provides a gateway for organisations to better understand their exposure to nature-related risks, whilst also providing valuable and actionable data for those companies that are more advanced on their TNFD journey. The report identifies the strengths and limitations of the platform, and provides four case studies detailing how financial institutions are currently using Forest IQ and its associated tools in the context of the TNFD. It also provides a number of case studies demonstrating how to overcome the limitations of the platform using satellite-based assessments to verify the data provided in Forest IQ. In addition to financial institutions, this report is also valuable to soft-commodity companies; by understanding the policies, standards and approaches of financial institutions, soft-commodity companies can ensure they have the systems that align with investment and lending expectations.

Why deforestation?

Deforestation and the degradation of nature are gaining greater attention from regulators, shareholders and consumers alike. In response, various frameworks and regulations are being developed and implemented, meaning that industry standards and regulations are increasing and strengthening. Frameworks such as the TNFD and the Kunming-Montreal Global Biodiversity Framework (GBF) and existing and upcoming legislation such as the European Union Deforestation Regulation (EUDR), the UK Environment Act and the FOREST Act are clear evidence of the driving need for financial institutions and soft-commodity companies to actively manage and eliminate deforestation, ecosystem conversion and associated human rights abuses.

Forest IQ is a data platform designed for financial institutions, providing information on how over

2,000

companies manage risks associated with deforestation

Forest IQ and its limitations

Forest IQ is a data platform designed for financial institutions, providing information on how over 2,000 companies manage risks associated with deforestation. It offers open data and metrics, alongside a paid-for model that offers financial institutions access to licensed data, financial identifiers and a bespoke API. By managing deforestation risks, Forest IQ aims to help financial institutions move toward deforestation-free portfolios. Forest IQ brings together the best-available datasets on how companies are addressing their exposure to deforestation, ecosystem conversion and associated human rights abuses, including ZSL's SPOTT, Forest 500, Trase and the Roundtable on Sustainable Palm Oil (RSPO). In addition to bringing together a wide range of different types of data, three core metrics on exposure, materiality and performance provide a simple and practical high-level company benchmark on deforestation. Forest IQ's strengths lie in its ease and efficiency to access a wide range of standardised metrics in one centralised location, all from trusted and well-recognised sources.

However, it is important to note the limitations of Forest IQ, which should be taken into consideration when using the data. A key limitation to consider is that insights primarily rely on self-reported data, company disclosures and information populated by the company themselves and submitted via questionnaires. This is important to note as approaches to collecting and reporting on the same information may differ between companies. Another limitation of self-reported data is that it leaves room for omission of wrongdoing by companies. Furthermore, approaches to reporting may lack specificity, particularly relating to deforestation monitoring given commodity supply chains are not transparent. The data points relating to deforestation in the database focus more on the quality of a company's commitment to end deforestation, ecosystem conversion and associated human rights abuses, rather than their current performance. Further methodological limitations are noted in Forest IQ's publicly available user methodology.

Alignment of Forest IQ with the TNFD

A key component of the TNFD is the LEAP approach, which is an integrated assessment approach for nature-related risk and opportunity management. The LEAP approach is provided as voluntary guidance to help businesses generate the necessary information to align with the TNFD disclosure recommendations. Forest IQ is useful for undertaking the LEAP approach as it provides data and insights for each stage of the process. It provides an excellent source of information to assist with identifying and disclosing impacts, dependencies and risks of various companies and sectors. It also provides indicators of the measures each company is taking to address risks at a policy level, which then allows financial institutions to develop and implement targeted strategies to directly address any gaps or shortcomings identified.

CASE STUDY

The use of Forest IQ within financial institutions

Interviews were undertaken with Schroders, Robeco, Federated Hermes Limited and Storebrand to understand and demonstrate how each of the financial institutions uses Forest IQ and its associated tools for their internal processes. In all cases, each of the financial institutions was using the information and data available in Forest IQ to address various components of the LEAP approach. Whilst they did not explicitly label their process as being applied for this purpose, in undertaking the steps outlined above, they are inadvertently implementing components of the LEAP approach which can be built upon as they implement nature-related dependency, impact, risk and opportunity assessments. It should be noted that each of the financial institutions has committed to being a TNFD Early Adopter, but the study was undertaken prior to the formal adoption of the TNFD and, therefore, it is likely that Forest IQ is now explicitly being used to support their implementation of the LEAP approach.

CASE STUDY

Satellite-based verification of Forest IQ results

Because Forest IQ data relies primarily on self-reported data and public disclosures, there is potential for differences between the Forest IQ insights, which reflect what companies state they are doing to combat deforestation and what is happening on the ground. To investigate this potential discrepancy, Frontierra undertook assessments of nine companies listed on the Forest IQ database that were of interest to the financial institutions interviewed. Of the nine companies, only three provided public traceability of their supply chains, meaning only three were able to be assessed via satellite-based verification methods. Given the importance and emphasis of transparency within the sector, companies that do not publish traceability of their supply chain represent a significant risk to financial institutions - this risk should be considered greater than those that publish traceability even when significant deforestation exposure is identified.

Of the three companies that provided public traceability, Frontierra undertook satellite-based assessments to quantify potentially attributable deforestation and compare the findings to Forest IQ's insights. All companies had zero-gross deforestation commitments yet significant levels of attributable deforestation were identified for each company. Whilst some deforestation exposure is anticipated as companies work towards their commitments, the significantly high levels of deforestation exposure detected, combined with commitment dates that have past and commitment dates that are imminent or in the near future, indicate that the companies are not aligned with their commitments as reported in Forest IQ. Further information is required to robustly verify approaches to deforestation: financial institutions should be aware that, despite strong commitments, policies and disclosures, companies may represent material risks.

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Introduction

Introduction

As deforestation rates accelerate, nature and the climate reach critical tipping points, and consumer, shareholder and regulatory expectations and requirements evolve, it is now more evident than ever that corporate entities, including financial institutions, must mitigate the impacts they are having on ecosystems and society.

Forest IQ can provide a gateway for financial institutions seeking to align with the TNFD by providing insights into deforestation: a material financial risk as well as a critical nature and climate-related risk

In recognition of this, the Taskforce on Nature-related Financial Disclosures (TNFD) published disclosure recommendations in September 2023 in order to provide a consistent and accessible framework for organisations to disclose the ways and the extent to which they are managing and impacting nature. However, in developing the TNFD, it became evident that organisations require external data and tools to enable them to effectively identify, manage and report on nature-related issues.

One such tool is Forest IQ, which can provide a gateway for financial institutions seeking to align with the TNFD by providing insights into deforestation: a material financial risk as well as a critical nature and climate-related risk. The data platform provides a gateway for organisations that are seeking to better understand their exposure to nature-related risks, whilst also providing valuable and actionable data for those companies that are more advanced on their TNFD journey. Forest IQ brings together the best available data on more than 2,000 major companies and their links to deforestation, ecosystem conversion and associated human rights abuses from seven datasets including SPOTT, Trase and Forest 500. In addition to bringing together a wide range of different types of data, three core metrics on exposure, materiality and performance provide a simple and practical high-level company benchmark on deforestation. The platform was developed by the Zoological Society of London (ZSL), Global Canopy and the Stockholm Environment Institute (SEI), in consultation with 10 financial institutions, including some of the world's largest and most exposed banks and asset managers such as Blackrock, BNP Paribas and HSBC.

The data platform was launched in November 2023, at which point Frontierra was appointed to undertake a study into how Forest IQ can be utilised in adopting the TNFD, particularly in relation to the Locate, Evaluate, Assess and Prepare (LEAP) approach. LEAP provides an integrated, end-to-end approach to assessment and is a key component to disclosing against the TNFD recommendations. The purpose of the study was to demonstrate how Forest IQ can be used by financial institutions as part of their efforts to undertake the LEAP approach of the TNFD, including exploring any limitations end-users and decision makers should be aware of. The study is also of value to soft-commodity companies, to develop an understanding of the processes and expectations of financial institutions that may invest or provide funding to the agricultural sector.

The study included interviews with four financial institutions - **Schroders, Robeco**, **Federated Hermes Limited** and **Storebrand** - which are summarised in four case studies. The interviews identified the need for further verification of the data contained within Forest IQ and, as such, satellite-based investigations into a number of soft-commodity companies selected by the interviewed financial institutions were undertaken to compare with the data contained with Forest IQ. The satellite-based assessments are also presented as case studies.

Background and context

02

Background and context

Deforestation is a critical environmental and social issue, contributing significantly to climate change, biodiversity loss, and the degradation of water and soil quality.

Over 90% of deforestation worldwide is driven by agricultural expansion for a handful of globally traded commodities like beef, soy, palm oil and timber

If deforestation were a country, it would be the third highest emitter in the world. Deforestation is also inextricably linked to human rights violations, such as the displacement of Indigenous communities. Over ninety percent of deforestation worldwide is driven by agricultural expansion for a handful of globally traded commodities like beef, soy, palm oil and timber.

Financial institutions are uniquely placed to influence companies to shift their practices towards becoming deforestation-free. Their capital gives them leverage over the companies they finance. Further, focusing on deforestation can be a gateway for financial institutions to tackle a broader range of environmental and social issues. This approach not only helps to mitigate specific risks associated with deforestation, including potential damage to assets, reputational harm and legal liabilities, but also serves as a foundation for addressing other critical nature and climate-related challenges, such as biodiversity loss and water scarcity.

Beyond the mitigation of risks and impacts, deforestation and the degradation of nature are gaining greater attention from regulators, shareholders and consumers alike. In response, various frameworks and regulations are being developed and implemented, meaning that industry standards and requirements are gradually increasing in the same (albeit more rapid) trajectory that industry saw climate requirements being implemented; voluntarily initially, then legislated in some jurisdictions, whilst gradually becoming an international and industry standard. The following details a number of the major frameworks and regulations that are driving the need for financial institutions and soft-commodity companies to actively manage and eliminate deforestation, ecosystem conversion and associated human rights abuses.

2.1 Taskforce on Nature-related Financial Disclosures

The TNFD is a disclosure framework for organisations to assess, report and act on evolving nature-related dependencies, impacts, risks and opportunities, with the ultimate aim of supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes. The TNFD's 14 disclosure recommendations were published in 2023, developed through extensive engagement with market participants. The TNFD has collaborated with standards development bodies since 2021 with the aim to incorporate and converge other sustainability reporting frameworks, as opposed to creating new or additional approaches for disclosing entities. It is anticipated that it will inform incoming legislation that will be implemented in response to Target 15 of the Kunming-Montreal Global Biodiversity Framework (GBF). As of 28 June 2024, 114 financial institutions have committed to reporting in line with the TNFD, representing US$15.9 trillion in assets under management, including 25% of the world's systemically important banks.

2.2 Kunming-Montreal Global Biodiversity Framework

The Kunming-Montreal Global Biodiversity Framework (GBF) was adopted by the 196 member countries of the United Nations Convention on Biological Diversity in 2022 in order to halt and reverse biodiversity loss. Target 15 of the GBF is a commitment to implement legal, administrative or policy measures that ensures that financial institutions monitor, assess and transparently disclose their risks, dependencies and impacts on biodiversity by 2030. Industry expectation is that nature-related disclosure will shortly be incorporated into the same or similar mechanisms as climate-related disclosures.

2.3 The European Union Deforestation Regulation

The European Union Deforestation Regulation (EUDR) is a key legislative framework aimed at curbing global deforestation linked to the EU's consumption of agricultural products. With a baseline of December 2020, the EUDR requires companies to ensure that commodities like palm oil, soy, coffee, cocoa, and timber, as well as derived products, are not sourced from land deforested after this date. Currently the regulation is relevant to commodities imported into the EU, however future phases of the EUDR are expected to apply to financial institutions. The current wording of the legislation makes direct reference to financial institutions' role in funding deforestation (Chapter 8, Article 34, point 4) and references a possible expansion to include financial institutions will be reviewed no later than June 2025. The regulation mandates due diligence, traceability and transparency across supply chains, enforcing strict penalties for non-compliance. By targeting deforestation-free supply chains, the EUDR seeks to promote sustainable land use and protect biodiversity worldwide.

2.4 Other deforestation-free legislation and initiatives

A number of other pieces of legislation targeting deforestation are expected to be implemented in the near future. These include the Forest Risk Commodities (FRCs) regime, introduced through the UK Environment Act 2021 and the FOREST Act in the USA. In addition to proposed legislation, there are various deforestation-free initiatives within FRC sectors as well as deforestation-free finance initiatives such as the Finance Sector Deforestation Action (FSDA) Initiative, that has pledged to end investing in deforestation by 2025, the Financial Sector Commitment Letter on Eliminating Commodity-driven Deforestation signed by 33 financial institutions in 2021 and the Investor Policy Dialogue on Deforestation (IPDD) initiative, which is an investor-led sovereign engagement initiative that aims to halt deforestation in some of the most biodiverse, carbon absorbing biomes in the world. Collectively, there is a clear indication that with increasing scrutiny towards deforestation, financial institutions and companies are now expected to actively mitigate and address deforestation risks, and those that do benefit from enhanced reputation, reduced regulatory and financial risks, and alignment with growing market demand for sustainable investments.

Aims & objectives of the study

03

Aims & objectives of the study

3.1 Financial institutions

The primary purpose of the study was to explore the value which Forest IQ can bring to financial institutions that are considering adopting the TNFD and provide a report that can be used as guidance and to support these efforts. The report demonstrates how Forest IQ can be used within the LEAP approach and provides various case studies to illustrate its uses in multiple contexts. It emphasises its use as a first and important step in identifying potential nature-related impacts through highlighting companies or investments that have high exposure to deforestation risk, unsuitable policies or a lack of traceability. This information, readily obtained via Forest IQ, assists to identify companies that require further due diligence and engagement, and also provide the basis upon which an assessment of nature-related dependencies, impacts, risks and opportunities can be undertaken, in line with guidance from the TNFD's LEAP approach.

Additionally, this report explores the limitations of the Forest IQ platform and demonstrates how evaluations of nature-related risk, particularly deforestation, should be supported and strengthened through the use of satellite data, in order to enhance insights into deforestation occurrences within global soft-commodity supply chains.

3.2 Soft-commodity companies

For soft-commodity companies, this report provides a valuable resource to understand how investors and financiers are considering and approaching their investments and debt issuance from a nature and deforestation perspective. By understanding the policies, standards and approaches of financial institutions, soft-commodity companies can ensure they have the systems that align with investment and lending expectations.

Whilst not all financial institutions will adopt nature and deforestation requirements, by aligning with those that do, soft-commodity companies will have greater options for investment and financing, enabling them to access better financial options instead of being restricted to a smaller pool of options. Further, by aligning with nature and deforestation requirements, it will future-proof the business and ensure organisations are managing their exposure to transition risks associated with the introduction of nature-related legislation which are anticipated to be introduced within the next five years (for example, those to be implemented in response to Target 15 of the Kunming-Montreal GBF).

Overview of Forest IQ

04

Overview of Forest IQ

Forest IQ is a data platform designed for financial institutions to provide information on how over 2,000 companies manage deforestation risks.

It offers open data and metrics, along with tailored solutions and aims to help financial institutions move toward deforestation-free portfolios. Developed in collaboration with 10 financial institutions, including major global banks and asset managers, Forest IQ aligns with the Accountability Framework initiative (AFi). The platform was created by a group of not-for-profits with expertise in using data-driven methods to tackle deforestation, ecosystem conversion and associated human rights abuses.

Forest IQ brings together a wide range of different types of data and core metrics on exposure, materiality and performance, providing a simple and practical high-level company benchmark on deforestation. The key piece of feedback Frontierra has noted through its discussions with financial institutions is the benefit of having all of these disparate data sources in one central repository, saving time and streamlining assessments related to deforestation exposure and policy development. A number of the tools and databases that are included in Forest IQ are described in Table 4.1.

Tool / Database	Listed on Forest IQ	Data sources
SPOTT a ZSL conservation initiative	▪ Provides detailed assessments of companies involved in commodities linked to deforestation and other ESG issues, such as palm oil, timber and rubber. ▪ Evaluates companies' public disclosures on sustainability commitments and reported practices, offering insights into corporate environmental policies. ▪ Useful for assessing deforestation risk by examining companies' commitments and transparency in managing their environmental impacts.	Data is derived from publicly available information, such as sustainability reports, corporate websites, and third-party certifications and then scored based on a set of criteria.
FOREST 500	▪ Identifies and ranks the most influential companies and financial institutions in the supply chains driving deforestation, ecosystem conversion and associated human rights abuses. ▪ By assessing their policies and commitments to deforestation-free supply chains, it helps stakeholders understand which actors are taking action and those that are lagging, thereby aiding in the evaluation of deforestation risks.	Data is derived from publicly available information, such as sustainability reports, corporate websites and third-party certifications, and then scored based on a set of criteria.
trase (Transparency for Sustainable Economies)	▪ Provides data-driven insights into the supply chains of forest-risk commodities by mapping the connections between regions of production and consumption, highlighting deforestation risks associated with specific supply chains. ▪ Valuable for evaluating deforestation risk by revealing the trade flows and supply chain linkages that contribute to deforestation.	Data is collated from import and export information, shipping data, public records, customs declarations, trade volumes and company structures. Of note, Trase incorporates geospatial and remote sensing analysis on land use and deforestation associated with commodity production, however this is conducted at the municipal level, assigning deforestation risk or exposure per municipality and aligning with production volumes and is not evaluated for individual parcels.
CERTIFIED SUSTAINABLE PALM OIL ™ RSPO	▪ Sets global standards for sustainable palm oil production. ▪ Certifies palm oil producers who adhere to environmental and social criteria, aiming to reduce deforestation and promote sustainable practices. ▪ Useful for evaluating deforestation risk by identifying certified producers and ensuring compliance with sustainability standards in the palm oil industry, as well as the ability to see sourcing mills and even plantation-level data for some companies.	Data is collected from RSPO members in annual communications of progress (ACOPs), where members respond to questions relating to their exposure to palm oil, percentages of RSPO certified vs non-certified palm oil and region by region breakdowns.

4.1 Strengths of Forest IQ

By bringing together seven market leading deforestation-related datasets, Forest IQ represents significant benefits to financial institutions looking to gain a deeper understanding of deforestation exposure, related policies and reported performance. These strengths were cited by the financial institutions interviewed for the study which include Schroders, Robeco, Federated Hermes Limited and Storebrand (see Section 6 for more details). This information can serve as a gateway for financial institutions seeking to adopt the TNFD to better understand their exposure to nature-related risks, whilst also providing valuable and actionable data for those companies that are more advanced on their TNFD journey. Benefits include:

Ease and efficiency: Standardised metrics available in one centralised location is of significant value and makes for an easy entry point into evaluating deforestation risks and exposure for companies. Companies have a specific identifier which enables integration into other systems and the data is consolidated so is far less time intensive to use than downloading various separate datasets and alternating between them.

Quality and confidence of data: The quality and confidence in the fact that it is the best available data.

Number and type of metrics: Contains a diverse range of deforestation-related metrics and data points including human rights and deforestation policy analysis.

4.2 Limitations of Forest IQ

Whilst Forest IQ consolidates the best-available information in regard to deforestation, there are still a number of inherent limitations to the platform that reflect environmental, social, and governance (ESG) data availability and challenges in general. Through interviews with Schroders, Robeco, Federated Hermes Limited and Storebrand, limitations were identified and discussed, which are important to highlight and be aware of from the perspective of a financial institution interested in tackling deforestation and undertaking the LEAP approach.

Reliability of data as based on self-reported information: The majority of the data points in the Forest IQ database (with a few minor exceptions) rely on self-reported data, company disclosures, and information populated by the company themselves. Whilst this is common practice in the wider ESG industry, it leaves room for omission of wrongdoing and lacks specificity, particularly relating to deforestation monitoring given commodity supply chains are not transparent. The data points relating to deforestation in the database focus more on the quality of a company's commitment to end deforestation, rather than their current performance, which was a key motivating factor to undertake the satellite-based assessment verifications of the findings as detailed in Section 7.

Scope: Whilst the data is comprehensive, it is not exhaustive. At the time of writing, there are over 2,000 companies, however this is unlikely to cover a financial institution's entire portfolio of companies exposed to FRCs. Finally, further detail on the financial materiality metrics of FRC within a company is considered a gap as it provides useful insights and data points (for example, the percentage of revenue tied to the FRC).

Lack of location specificity: Due to the nature of the data from its original sources, there is no specific location element to this data (with the exception of some data points for some companies listed on Trase), so it does not aid in the ability to screen for high risk sourcing regions, for example. The TNFD's LEAP approach has the principle of location-specificity running throughout.

Data format: The data is made available in CSV format, which is a widely used, common format for larger databases. Some skill is nevertheless required to manage and manipulate the database to transform it into a useful summary for the financial institution.

Aggregation of data: To simplify the dataset and make it user friendly, some indicators have been aggregated which makes it difficult to assess the individual components.

Alignment of Forest IQ with the TNFD

05

Alignment of Forest IQ with the TNFD

The information and data available within Forest IQ provides valuable insights into nature-related impacts, dependencies, risks and opportunities, including a company's approach to managing and reporting those issues, which are key considerations of the TNFD.

Whilst the principal focus of Forest IQ is deforestation, ecosystem conversion and associated human rights abuses, deforestation is linked to a range of other nature, climate and human rights impacts and risks and therefore, the information and data contained within Forest IQ provides broader value than simply deforestation metrics. Forest IQ is of particular use to the LEAP approach of the TNFD, and can be utilised as a data source at each stage.

5.1 LEAP Approach and Forest IQ

A key component of the TNFD is the LEAP approach which is an integrated assessment approach for nature-related risk and opportunity management. The LEAP approach is provided as voluntary guidance to help businesses generate the necessary information to align with the TNFD disclosure recommendations. The key phases are:

- **Locate** your interface with nature
- **Evaluate** your dependencies and impacts on nature
- **Assess** your nature-related risks and opportunities, and
- **Prepare** to respond to, and report on, material nature-related issues, aligned with TNFD's recommended disclosures.

The LEAP approach comprises a series of guiding questions that are broken down into phases as illustrated in Figure 5.1.

Figure 5.1: The LEAP approach

(Source: TNFD, Guidance on the identification and assessment of nature-related issues: The LEAP approach, V1.1).

5.1.1

Locate

For a financial institution, the aim of the Locate phase is to identify the location of their assets, which includes identifying sectors or companies that have operations or supply chains that interact with nature. The Forest IQ database is a useful first step to screen for exposure to sectors and companies linked to key forest-risk commodities that interact with nature such as beef, leather, rubber, paper and pulp, timber, palm oil and soy.
A comparison of the companies within a financial portfolio and the companies listed on the Forest IQ database is a logical first step to identify companies, and their associated sectors, whose supply chains interact with nature through their dependence on nature, and potential to impact nature.

Forest IQ also identifies the countries where commodities are sourced in some instances, which helps to provide an indication of the potential impacts associated with that commodity. For example, some countries have significantly higher levels of deforestation, weaker regulatory requirements, and specific environmental or social issues associated with a particular commodity such as water stress, and therefore, sourcing from such countries may indicate the potential for specific impacts.

5.1.2

Evaluate

The Evaluate phase of the LEAP approach requires financial institutions to identify and measure the nature-related dependencies and impacts of their financed activities and value chains. Having identified companies within a portfolio that are present in the Forest IQ database, it is possible to then identify the potential dependencies and impacts based on their associated sectors and geographies. Further refinement can then be undertaken to evaluate a company's potential scale, scope, severity and materiality of the possible impacts and dependencies using a number of Forest IQ's valuable data points. These metrics include:

- Level of deforestation exposure
- Amount of reported deforestation
- Volume of commodity produced
- Reference to the land owned, managed or controlled by the company
- Amount of commodity volume that is compliant

5.1.3

Assess

The Assess phase requires financial institutions to assess the risks and opportunities associated with the nature-related dependencies and impacts that were identified in the Evaluate phase, and how these can be mitigated, managed and disclosed. Working through the various data points available in Forest IQ, it is possible to then identify and assess the nature-related risks and opportunities associated with the companies identified, and how the company is managing those risks and opportunities, which in turn informs the risks posed to and opportunities for the financial institution.

For example, once potential deforestation impacts have been identified in the Evaluate phase, the financial institution can then determine the risks of being exposed to a company that is deforesting (for example, financial risks such as reduced asset value, reputational risks, regulatory risk, and so on). Once they have determined the potential risks, Forest IQ can be used to determine if the company in question is actively managing the risk, which in turn may reduce the risk posed to the financial institution. This can be evaluated by interrogating data points such as:

-
  - No deforestation-commitment
  - Targets and cutoff dates for deforestation-commitments
  - Adequacy of reporting on deforestation and associated metrics
  - Adequacy of policies including:
    - Commitment to test for Free, Prior and Informed Consent (FPIC)
    - Commitment to respect customary and legal land rights
    - Commitment to address gender equality
    - Commitment to a zero-tolerance approach to violence and threats against Forest, Land and Human Rights Defenders.

Additionally, the financial materiality of deforestation risk to a financial institution can be evaluated using these same data points and quantifying the financial institution's exposure to those companies to determine the extent to which deforestation risks could impact financial performance, reputation, and regulatory compliance.

Further, a key component of the Assess phase is to identify mitigation actions that the financial institution can take to address the identified risks. Through Forest IQ's provision of insights into how a particular company is managing deforestation (for example, through the indicators above), the financial institution can then implement targeted strategies to directly address any gaps or shortcomings identified.

5.1.4

Prepare

Having completed the Locate, Evaluate and Assess phases of the LEAP approach, the Prepare phase is focused on identifying the resources, strategies and mechanisms required to implement the identified actions, monitor implementation and disclose in line with the TNFD. Using the information identified in the steps above, a response strategy to manage nature-related risks and opportunities specific to deforestation can be developed. Potential steps include:

- Engagement with companies through dialogues and shareholder resolutions based on the insights gathered, using Forest IQ data as a basis for questions and demands.
- Updating or adjusting investment policies to incorporate nature-related criteria, such as Forest IQ data.
- Divestment as a final step if companies are unwilling to work collaboratively to manage deforestation risk and nature-related impacts.
- Disclosure in line with TNFD Recommendations, utilising Forest IQ data to inform reporting on nature-related risks and opportunities.

Further, the information regarding the level of exposure the financial institution has to companies with exposure to deforestation can be incorporated into public disclosures and reporting which can be informed by the information available in Forest IQ.

06

Case Studies: The use of Forest IQ within financial institutions

CASE STUDIES

The use of Forest IQ within financial institutions

As part of the study, four interviews were conducted with ESG and sustainable finance representatives at four major financial institutions which have utilised Forest IQ and/or its associated tools and datasets.

The purpose of the interviews was to gain an understanding of how the organisations are using Forest IQ, in order to determine its usefulness for the TNFD's LEAP approach. Each participant also identified the strengths and weaknesses of Forest IQ which is included in Section 4.1 and 4.2.

6.1 Robeco

Robeco is a Netherlands-based asset management company that specialises in sustainable investing and manages over €200 billion in assets across various investment strategies. It offers a wide range of investment solutions, including equities, fixed income, and multi-asset portfolios, with a strong focus on integrating ESG factors.

Robeco is recognised for its commitment to responsible investing, leveraging research and innovation to drive long-term returns while promoting sustainability. The company has committed to being a TNFD Early Adopter and will start making disclosures aligned with the TNFD Recommendations in its corporate reporting by the financial year 2024.

6.1.1 Approach to deforestation

Robeco recognises that deforestation directly affects future economic prosperity and represents a long-term, financially material and systemic risk to investors' assets. Examples the company provides of specific risks include reduced market access and increased cost of capital for companies that fail to meet existing and incoming deforestation-free regulations. Additionally, companies linked to soft-commodity supply chains that rely on ecosystem services provided by forests may be subject to higher costs and more volatile commodity prices due to deforestation and broader land conversion compromising these services. As such, Robeco considers the management of deforestation risk as part of its fiduciary duty.

In line with this, Robeco has committed to use its best efforts to eliminate forest-risk agricultural commodity-driven deforestation across its investment portfolios by 2025. The company has established a deforestation approach which includes:

- Targeted corporate engagements with companies exposed to deforestation linked to forest-risk commodities
- Involvement in collaborative engagements with industry peers focused on deforestation and broader land conversion
- Engaging with policy makers and regulators to support their work on halting deforestation. This is critical for countries to meet their National Determined Contribution under the Paris Agreement and deliver the goals under the Global Biodiversity Framework agreed at COP15.
- Integrating deforestation risks into investment analysis when relevant
- Conducted a deforestation risk assessment across its investments
- Deforestation proxy voting which targets companies with high exposure to deforestation risk and inadequate policies and processes to reduce their impact, and/or companies that are involved in severe and repeated deforestation-linked controversies
- Engaging with data providers to advance the availability of decision useful deforestation-related data
- Strategic partnership with WWF-NL to advance Robeco's broader work on nature.

> **"Deforestation poses a significant financial risk to investors. Forest IQ contributed to consolidate and strengthen deforestation-related data available to investors. Robeco actively uses these insights in its stewardship activities, nudging companies to improve how they manage and disclose deforestation-related risks."**
>
> QUOTE FROM ROBECO

6.1.2 How Robeco utilises Forest IQ and associated tools

Robeco has undertaken a mapping of its investment exposure to companies linked to forest-risk commodities. The first step was to identify its investment exposure to companies included in Forest 500, which is one of the datasets that informs Forest IQ. Robeco expanded the analysis by identifying companies deriving material revenues directly or indirectly from forest-risk commodities based on data from an external data provider. These two steps allowed Robeco to identify the key companies across its investments that are linked to deforestation and broader land conversion risks.

In a second step, Robeco conducted a deforestation and human rights due diligence assessment. Forest IQ data was one of the data sources used to identify whether companies exposed to deforestation risks had appropriate policies in place to address these issues.

The results from this assessment were used to inform Robeco's voting approach on deforestation issues. For example, the asset manager has voted against specific agenda items for companies that are exposed to deforestation risks but do not have a deforestation policy in place based on Forest IQ data.

Additionally, Robeco uses Forest 500 data for engagement purposes. For example, where transparency has been lacking within investee companies, Robeco has requested they increase the level and quality of disclosures in alignment with the type of indicators included within Forest 500, SPOTT and relevant aspects of CDP, all of which are incorporated into Forest IQ.

Alignment with the TNFD

Whilst the Robeco processes do not explicitly state that they are following the TNFD's LEAP approach, the processes follow the key stages in effect and demonstrate how Forest IQ can support these key steps. These stages are described below:

- **Locate and Evaluate** - Mapping of the portfolio exposure to potential deforestation impacts reflects the approach recommended within the Locate and Evaluate phases.
- **Assess** - Robeco's process for engagement and proxy voting in regard to deforestation risks reflects the Assess phase's recommendations regarding risk mitigation and management.
- **Prepare** - Robeco's annual public disclosures of deforestation exposure and reporting to progress against deforestation target aligns with the Prepare phase.

6.2 Schroders

Schroders is a global asset management company based in the United Kingdom, providing investment solutions across equities, fixed income, multi-asset, private assets and alternatives. It serves a wide range of clients, including institutions, intermediaries and individual investors, with a strong emphasis on active management and long-term performance. Schroders manages over £700 billion in assets across a wide range of investment strategies, making it one of the largest asset managers worldwide.

The firm is committed to sustainability, integrating ESG principles into its investment strategies to create lasting value. It has committed to being a TNFD Early Adopter and will start making disclosures aligned with the TNFD Recommendations in its corporate reporting from financial year end 2024 (to be published within 2025).

6.2.1 Approach to deforestation

Schroders places significant importance on deforestation and considers management of its associated risks as part of its fiduciary duty. This is reflected in its Plan for Nature in which it states that whilst managing deforestation is "crucial to addressing the systemic financial market risks associated with climate change, nature loss, and food security concerns, it is also in the best long-term interests of our clients and their beneficiaries." Deforestation is also one of Schroders' four critical natural capital and biodiversity issues and states that "we have a responsibility to mitigate risks in the portfolios we manage for our clients, including the risks associated with nature loss" in its Nature and Biodiversity Position Statement 2024.

In line with this, Schroders has committed to eliminating exposure to agricultural commodity-driven deforestation in the companies held in its investment portfolios under management by 2025. To do so, it has developed a strategy in which it:

- Identifies at-risk companies and prioritises the largest holdings with the highest exposure
- Implements targeted engagement programmes for at-risk companies
- Monitors the companies' progress on deforestation on an annual basis and measures the outcomes of Schroders' engagement
- Escalates where companies are unable to demonstrate sufficient progress and compliance.

Schroders has developed various mechanisms that sit under these elements including a due diligence process, an internal deforestation scorecard and defined methods of escalation.

"We believe it is important that companies start articulating their risks, impacts and dependencies on nature, to help ensure nature-related risks can be identified and integrated in investment decisions. As we undertake our own LEAP Assessment ahead of our first TNFD report for FY24, and approach the critical year of 2025 for deforestation commitments, we have welcomed the consolidation of company-level deforestation data through the Forest IQ platform."

QUOTE FROM SCHRODERS

6.2.2 How Schroders utilises Forest IQ and associated tools

Schroders uses Forest IQ within its existing due diligence processes in relation to deforestation, both by using the data to identify companies that are potentially exposed to deforestation risks and assessing how well they are addressing those risks. Schroders does this by using its Deforestation Scorecard to measure companies' exposure to and management of forest-related risks, with the goal of fostering a deeper understanding of how company actions can be improved. The Scorecard utilises data from Forest IQ among other commercial and open-source resources to evaluate companies across five key dimensions: Strategy and Ambition; Governance and Oversight; Risk management and traceability; Metrics & Targets; and Human rights and social impacts. Using this information, Schroders is then able to undertake targeted engagement with the company, aligned with the Schroders Engagement Blueprint, and ongoing monitoring of its performance.

Alignment with the TNFD

Whilst the Schroders processes do not explicitly state that they are following the TNFD's LEAP approach in their evaluation of deforestation (however they are in the process of undertaking a separate LEAP assessment in 2024), the processes undertaken, making use of Forest IQ data, demonstrates how it can support these steps. These stages are described below:

- **Locate and Evaluate** - Schroders identifies companies that interact with and have exposure to deforestation by cross referencing a portfolio with Forest IQ list of companies, which then allows the organisation to understand the impacts and dependencies.
- **Assess** - Once high risk entities are identified, Schroders then determines their management of deforestation risk by reviewing company policies and reporting which as summarised in the Forest IQ database alongside other third party resources. The organisation is then able to determine appropriate mitigation actions such as developing a response strategy, including active engagement, monitoring annual progress on deforestation and potential escalation if deforestation risks are not being adequately addressed.

6.3 Federated Hermes

Federated Hermes Limited is the London based subsidiary of Federated Hermes, a global asset management firm headquartered in the United States, known for providing investment solutions across equities, fixed income, alternatives, and liquidity management. Federated Hermes Limited manages over $50 billion in assets (as at 31 December 2023) across various investment strategies.

Federated Hermes Limited is a leader in active stewardship, engaging with companies to promote ethical business practices and drive positive societal impact. Federated Hermes Limited emphasises responsible investing, integrating material E, S and G factors into its strategies with the aim of delivering responsible, long-term returns. The company has committed to being a TNFD Early Adopter and began integrating disclosures aligned with the TNFD Recommendations into its corporate reporting in 2023.

6.3.1 Approach to deforestation

Federated Hermes Limited considers addressing risks associated with deforestation part of its fiduciary duty to maximise long-term financial returns on investment on behalf of its clients. The company understands that deforestation presents a systemic risk for financial markets and may limit its ability to create enduring, responsible wealth for its clients and their beneficiaries. It recognises deforestation and associated human rights violations may present financially material risks to financing and investment activities through operational, supply chain, regulatory, litigation and market risks. Risks could arise, for example, through reputational harm or changing consumer preferences that impact the company or financial institution associated with deforestation, conversion or human rights abuse. It could also come through the imposition of higher costs or fines by governments and regulators.
In response to these risks and to contribute to efforts to eliminate deforestation, Federated Hermes Limited have defined individual approaches and policies to deforestation for its various activities including Public Equity and Credit, Real Estate, Direct Lending, Infrastructure, Real Estate Debt and Private Equity. Key components of these approaches include:

- Undertaking and reporting on an annual assessment of commodity-driven deforestation risk and mitigation activities across its portfolios.
- Public policy advocacy including engaging with regulators and policymakers globally, and working with investors and other stakeholders to call on governments to adopt and enforce deforestation policies.
- Enhanced due diligence for private equity investments that are within sectors considered at high risk of deforestation.
- Engagement with companies in public markets that source palm oil, soy, beef, leather, timber, pulp and paper, among other relevant commodities, to urgently commit to clear timelines for eliminating deforestation from their supply chains by 2030 at the latest.
- Undertake ongoing due diligence in its real estate, private equity and direct lending portfolios.
- Seeking to incorporate deforestation-related expectations into loan agreements within real estate debt transactions.

> **“Deforestation poses a real threat to long-term value creation. Asset managers need to factor in these risks or face financial, regulatory, and reputational fallout. We expect companies to act – implement traceable, sustainable supply chains, and report transparently – because protecting forests isn’t just about the planet, it’s smart business.”**
>
> QUOTE FROM FEDERATED HERMES

6.3.2 How Federated Hermes utilises Forest IQ and associated tools

Federated Hermes Limited has undertaken assessments of its investments’ exposure to commodity-driven deforestation, focusing on palm oil, soy, cattle products, timber, and paper and pulp in order to identify which investments and sectors are most at risk of deforestation. These assessments have been primarily undertaken using Forest IQ and its associated tools such as Forest 500, SPOTT and Trase. Its assessments are also supported by a range of other commercial, NGO and open sources.

Following the identification of high-risk companies, Federated Hermes Limited undertakes enhanced due diligence in some instances and aims to engage with those that are considered to be at greatest risk and/or have limited transparency. Beyond engagement, Federated Hermes Limited has the ability to undertake site visits for some investments but it does not undertake verification of companies such as satellite-based monitoring. Federated Hermes Limited then reports annually on its assessment of commodity-driven deforestation risk and mitigation activities across our portfolios as demonstrated through the Deforestation Report 2023.

Alignment with the TNFD

Whilst the Federated Hermes Limited processes do not explicitly state that they are following the TNFD’s LEAP approach, the processes follow the key stages in effect and demonstrate how Forest IQ can support these key steps. These stages are described below:

- **Locate and Evaluate** - Federated Hermes Limited assessments of exposure to commodity-driven deforestation reflects the Locate and Evaluate stages through identifying which companies and sectors are exposed to deforestation.
- **Assess** - Once high risk companies and sectors are identified, the enhanced due diligence, subsequent engagement with companies with deforestation risk and incorporating deforestation-related expectations into loan agreement aligns with the mitigation measures recommendations within the Assess phase.
- **Prepare** – Federated Hermes Limited annual public disclosures of deforestation exposure and reporting to progress against deforestation target aligns with the Prepare phase.

6.4 Storebrand

Storebrand is a Norwegian financial services company that specialises in insurance, asset management, and pension savings and manages over NOK 1 trillion (approximately USD$100 billion) in assets. It is one of Norway's leading providers of long-term savings and insurance solutions, serving both private and corporate customers. Storebrand's investment portfolio is diverse and global, spanning various asset classes, including equities, fixed income, real estate, and alternative investments.

The company has a strong commitment to sustainability and responsible investments, integrating ESG factors into its business practices. Storebrand Asset Management has committed to being a TNFD Early Adopter and will start making disclosures aligned with the TNFD Recommendations in its corporate reporting by the financial year 2024.

6.3.1 Approach to deforestation

Storebrand views managing deforestation as part of its fiduciary duty as it recognises that biodiversity and nature loss will affect the capacity of the company's long-term economic growth and is likely to have implications for long-term asset returns. It recognises that environmental change can trigger significant disruptions to economic production and affects nature's capacity to continue providing the ecosystem services on which the society and economy depends.

As such, Storebrand's ambition is to have an investment portfolio that does not contribute to commodity-driven deforestation, conversion of natural ecosystems or associated human rights abuses by 2025 and therefore, deforestation is included within its exclusion criteria for investing. Storebrand is committed to not knowingly financing operations that are illegal, fail to protect high conservation value forests/land or violate the rights of workers and local people. To support this commitment, they have a detailed strategy for ESG integration and active ownership, and adopted a deforestation policy in 2019. Storebrand is a founding member of the IPDD; a collaborative investor initiative to engage with policymakers in selected countries to halt deforestation, as well as the FSDA, an investor coalition for engagement with companies exposed to deforestation risk.

Key pillars of its approach to deforestation includes:

- Portfolio screening of deforestation risk and annual assessments of its investment portfolio for deforestation risk exposure.
- Active ownership and stakeholder engagement whereby it aims to help companies eliminate deforestation from their operations and supply chains and reduce risk exposure. A component of this is using voting rights as shareholders to promote forest protection and company management of deforestation risk.
- Potential exclusion for companies unwilling to engage or meet expectations regarding deforestation.
- Disclosing annually on portfolio exposure to deforestation and actions to address deforestation exposure.
- Reporting as required on a regular basis to the Board of Directors.

"Ending deforestation and degradation of natural ecosystems is essential to meeting global climate and nature goals. As a long-term investor, we are concerned about the impacts of forest loss on the global economy as well as on people and nature, and we aim to use our influence to advocate for business practices that protect and restore forests."

QUOTE FROM STOREBRAND ASSET MANAGEMENT

6.3.2 How Storebrand utilises Forest IQ and associated tools

Storebrand originally developed a portfolio screening methodology in 2020 based on the datasets Forest 500 and Trase. Since the development and launch of Forest IQ, the screening method has now been updated to rely on Forest IQ which incorporates both Forest 500 and Trase. The screening process is also supplemented by a range of different other data sources such as NGOs, and media reports. The company views the key benefits of Forest IQ as having all the data in a consolidated dataset with metrics built around exposure and financial materiality, in addition to scores based on company commitment and reporting.

Storebrand also utilises Forest IQ as part of its risk assessment process, however it is limited in its ability to be used for exclusion purposes as the datasets don't provide direct links to deforestation, but only an indication of the quality of the company's commitments, reporting and the quantity of commodities that they source. As such, it uses the data included within Forest IQ to determine which companies to engage and what aspects to engage on, and to compare between companies. Beyond engagement, it does not undertake verification of companies such as satellite-based monitoring but recognise the value this would offer.

The information gathered through these processes, which are informed by Forest IQ and the associated tools, are then disclosed annually through publications such as the company's Sustainable Investment Reviews in which Storebrand describes its exposure to companies listed within the datasets.

Alignment with the TNFD

Whilst the Storebrand processes do not explicitly state that they are following the TNFD's LEAP approach, the processes follow the key stages in effect and demonstrate how Forest IQ can support these key steps. These stages are described below:

- Locate and Evaluate - Storebrand's portfolio screening process reflects the Locate and Evaluate stages through identifying which companies and sectors are exposed to deforestation, and considering the potential severity and materiality of the impacts associated with deforestation.
- Assess - Risk assessment process and subsequent engagement with companies with deforestation risk aligns with the risk identification and mitigation measures recommendations within the Assess phase.
- Prepare - Storebrand's annual public disclosures of deforestation exposure and progress against deforestation target aligns with the Prepare phase.

6.5 Key findings of financial institution case studies

In all cases, each of the financial institutions were using the information and data available in Forest IQ to address various components of the LEAP approach. Whilst they did explicitly label their process as being applied for this purpose, in undertaking the steps outlined above, they are inadvertently implementing components of the LEAP approach which can be built upon as they implement nature-related risk, opportunity, impact and dependency assessments. It should be noted that each of the financial institutions have committed to being TNFD Early Adopters, but the study was undertaken prior to the formal adoption of the TNFD and therefore, it is likely that Forest IQ is now explicitly being used to support their implementation of the LEAP approach.

It is also clear that the scope of their work in identifying deforestation risk is primarily limited to publicly available information such as key data obtained from Forest IQ and public disclosures, and engagement with the companies. The financial institutions do not typically undertake third-party verification of deforestation statements made by the company such as satellite-based assessments of sourcing locations. In practice, it can be difficult for financial institutions to implement these assessments without traceability and transparency such as access to mills and plantation data. Given financial institutions rely heavily on active engagement and stewardship, it is recommended that the financial institutions use these mechanisms, together with the findings of the satellite-based assessment, to demonstrate the need for and requirement that companies provide plantation-level traceability and public disclosure of total hectares of deforestation.

“In all cases, each of the financial institutions were using the information and data available in Forest IQ to address various components of the LEAP approach.”

07

Case Studies: Satellite-based verification of Forest IQ results

Satellite-based verification of Forest IQ results

Of the four financial institutions that were interviewed as part of this study, three submitted a list of companies involved in soft commodities from which they sought further verification beyond the Forest IQ information, to ascertain a clearer picture of deforestation exposure through a satellite-based assessment.

Open-source information for all companies was evaluated to obtain information on traceability in their supply chains and the datasets and tools used for verification are described in Table 7.1. The method for assessment is provided in Appendix 1.

Table 7.1: Datasets and tools used for verification

Metric	Description
Forest IQ	The study focused on data points within the Forest IQ database that were related to deforestation and could be attributed to the LEAP approach of the TNFD. Where the companies provided by the financial institutions were listed in the Forest IQ database (seven of the eight companies), data points relating to deforestation were extracted to compare with the findings of the satellite-based assessment. The key data points from Forest IQ which were focused on in this evaluation were detailed data points relating to Metrics 1, 3.1a and 3.2a from the database.
Sustainability reports	The study focused on data points within the Forest IQ database that were related to deforestation and could be attributed to the LEAP process of the TNFD.
RSPO palm oil mill lists	Whilst not mandatory for members of RSPO, many companies have taken initial steps towards transparency and traceability by publishing the palm oil mills which they source from. These mills are published as latitude and longitude points. From these points, 25 km buffers were applied to identify a conservative sourcing region, within which the entire region was analysed for deforestation.
Deforestation data	Deforestation data was derived by using annual forest loss data from Global Forest Watch. Loss identified within areas of known palm oil plantations (Adria et al. 2021) and within areas of known timber plantations (Harris et. al, 2015) was filtered out to ensure erroneous classification of cultivation or crop rotation misidentified as tree cover loss was not included in the analysis.
Satellite imagery	Further verification of the automated deforestation assessment and identification of new palm oil plantations was undertaken using Planet's NICFI service of monthly imagery mosaics.

The companies selected for further verification are detailed in Table 7.2. The names of the companies are not listed due to legal reasons and therefore the results have been anonymised.

Table 7.2: Companies selected for further verification

Reference	Type of company	Soft commodities	Listed on Forest IQ	Publicly available traceability
Company A	Pulp & Paper Producer	Pulp & Paper	Yes	None
Company B	Global Corporation	Beef, Palm oil, Pulp & Paper, Soy	Yes	Palm oil mills available via RSPO
Company C	Food Corporation	Beef, Palm oil, Pulp & Paper, Soy	Yes	None
Company D	Fashion Company	Palm oil, Pulp & Paper, Soy	Yes	None
Company E	Food Processing Company	Palm oil, Pulp & Paper, Soy	Yes	Palm oil mills and some plantations available via RSPO
Company F	Food Processing Company	Palm oil, Pulp & Paper, Soy	Yes	None
Company G	Multinational Corporation	Palm oil, Pulp & Paper, Soy	Yes	None
Company H	Food Manufacturer	Palm oil, Pulp & Paper, Soy	Yes	Palm oil mills available via RSPO
Company I	Pulp & Paper Producer	Pulp & Paper, Timber	Yes	None

Of the nine companies selected, only three provide public traceability of their supply chains. Of those three, only information related to palm oil production was publicly available. The key factor differentiating palm oil traceability from other commodities is the RSPO. The Roundtable encourages the publishing of palm oil processing mills and plantations on the RSPO member portal and this enabled three companies to be evaluated for deforestation exposure.

The fact that traceability was not able to be investigated for other commodities or other companies highlights a significant issue facing agricultural value chains; without traceability or complete transparency, the true impacts of production on nature, and forests in particular, cannot be robustly evaluated. Thanks in part to the global focus on the palm oil industry, the RSPO has elevated the industry to a global leader when compared to other commodities' traceability and transparency efforts. Through continued awareness of the interconnectivity between nature and business, as well as legislation and frameworks such as the TNFD and others described in Section 2, it is possible that similar steps towards transparent traceability in other sectors may eventuate in the future.

COMPANY B

7.1

7.1.1

Results of assessment

Company B findings

Through the RSPO member portal, a mill list for their palm oil was able to be identified, however this is unlikely to be a complete list of sourcing locations. Of the almost 600 mills assessed and since the end of 2020 (aligning with the EUDR);

- 3% contained no deforestation in their sourcing region which was considered to be within a 25 km buffer of the mill
- 64% had up to 50 ha of deforestation in their sourcing region
- 33% of mills had significant levels of deforestation of over 50 ha ranging up to 419 ha in their sourcing region.

3%
contained no deforestation in their sourcing region which was considered to be within a 25 km buffer of the mill

64%
had up to 50 ha of deforestation in their sourcing region

33%
of mills had significant levels of deforestation of over 50 ha ranging up to 419 ha in their sourcing region

The results of the analysis are displayed in Chart 7.1 and Chart 7.2. It should be noted that the number of hectares of deforestation cannot be summed as there is the potential for overlapping buffers and therefore, some areas of deforestation may be duplicated. Further, due to the potential of other mills operating in the same area, the deforestation identified cannot be directly attributed to one specific palm oil mill but instead serves as an indicator. Refer to Section 7.2 for further information on the limitations of the assessment.

Visual examples of conversion of forest to palm oil within proximity to a sourcing region can be seen in Figures 7.1 and 7.2.

Within Forest IQ, Company B was classed as having high deforestation exposure. The satellite-based assessment aligns with Forest IQ's results, as it is confirmed that Company B has high deforestation exposure meaning that whilst the deforestation can't be directly attributed to the Company, there is high likelihood that they have contributed to the deforestation due to their close proximity as determined through analysis of deforestation within the 25 km sourcing regions of the mills its palm oil is sourced from.

However, Forest IQ also states that Company B has a zero-gross deforestation commitment, with a target date of 2028. Whilst this date is much later than similar companies, the commitment could be interpreted that the Company is actively working to reduce deforestation risk. Yet given the significant levels of deforestation exposure identified within its publicly listed sourcing regions, the satellite-based assessment suggests that whilst it has a commitment, Company B is unlikely to be undertaking sufficient action to manage deforestation and may represent material risks. It should be noted that Company B scored poorly in Forest IQ for deforestation reporting and did not report on how many hectares of deforestation occurred in its supply chains. As such, a direct comparison to disclosed hectares of deforestation was not possible.

COMPANY B

Chart 7.1: Hectares of deforestation within a 25 km buffer of Company B per mill. Note that 265 mills had less than 20 hectares of deforestation which are not shown on the chart.

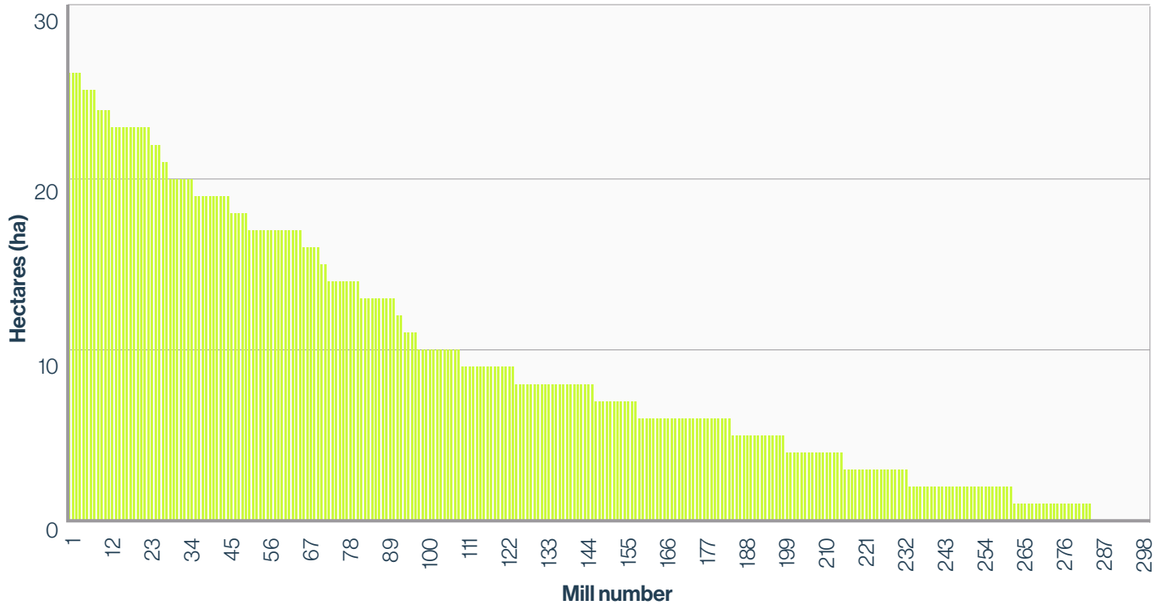
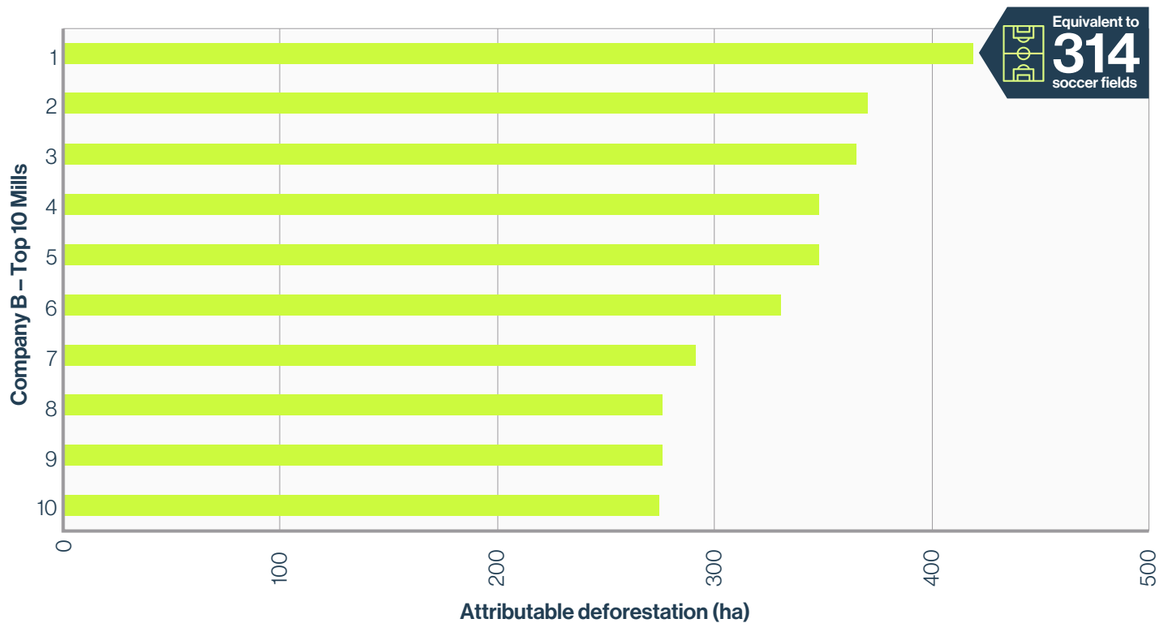


Chart 7.2: Top 10 mills for hectares of attributable deforestation within a 25 km buffer of Company B



COMPANY B

Figure 7.1: Prior to Loss: Green boxes show areas of forest lost to palm oil production within close proximity of a palm oil mill (noted as a red point) in Malaysia

Figure 7.2: After Loss: Orange boxes show areas of forest lost to palm oil production within close proximity of a palm oil mill in Malaysia

7.1.2

COMPANY E

Company E findings

Through the RSPO member portal, both smallholder plantations and a mill list for the palm oil producer were able to be identified; however, this is not the complete list of plantations and mills that the Company sources from as per the information obtained from SPOTT. No deforestation was identified in the plantations listed, although deforestation was identified within the immediate vicinity of their boundaries. Whilst there is no evidence to show that the deforestation was caused by the smallholder plantations, it represents deforestation risk as it is common practice to expand their operations by deforesting bordering regions of their property. Of the almost 50 mills assessed and since the end of 2020 (aligning with the EUDR);

- 71% had up to 50 ha of deforestation in their sourcing region which was considered to be within a 25 km buffer of the mill
- 29% of mills had considerable deforestation of over 50 ha ranging up to 620 ha
- The results of the analysis are displayed in Chart 7.3 and 7.4.

71%
had up to 50 ha of deforestation in their sourcing region which was considered to be within a 25 km buffer of the mill

29%
of mills had considerable deforestation of over 50 ha ranging up to 620 ha

Visual examples of conversion of forest to palm oil within proximity to a sourcing region can be seen in Figures 7.3 and 7.4 and forest loss occurring in immediate proximity to plantations is shown in Figures 7.5 and 7.6.

Within Forest IQ, Company E was classed as having critical deforestation exposure. This finding is supported by the satellite-based assessment, given the volume of deforestation identified within the 25 km sourcing regions of the mills they source from.

Forest IQ also states that the Company has a zero-gross deforestation commitment and is classed as advanced for its deforestation commitment strength which includes a cut off date of 2015. This commitment is likely to be seen favourably by financial institutions, however, given the significant amounts of attributable deforestation found within the small subset of plantations made available and the mills assessed, the satellite-based assessment suggests that despite this strong commitment, Company E's activities may not be aligned. As such, further information is required to robustly verify Company E's approach to deforestation and financial institutions should be aware that the Company may represent material risks.

The Company scored moderate for deforestation reporting and it does not report on how many hectares of deforestation occurred in its supply chains since the commitment cut-off date. This demonstrates a need for complete plantation-level traceability and public disclosure of total hectares of deforestation as third-party verification can only provide an indication of risk as opposed to robustly identifying deforestation.

COMPANY E

Chart 7.3: Hectares of deforestation within a 25 km buffer of Company E per mill

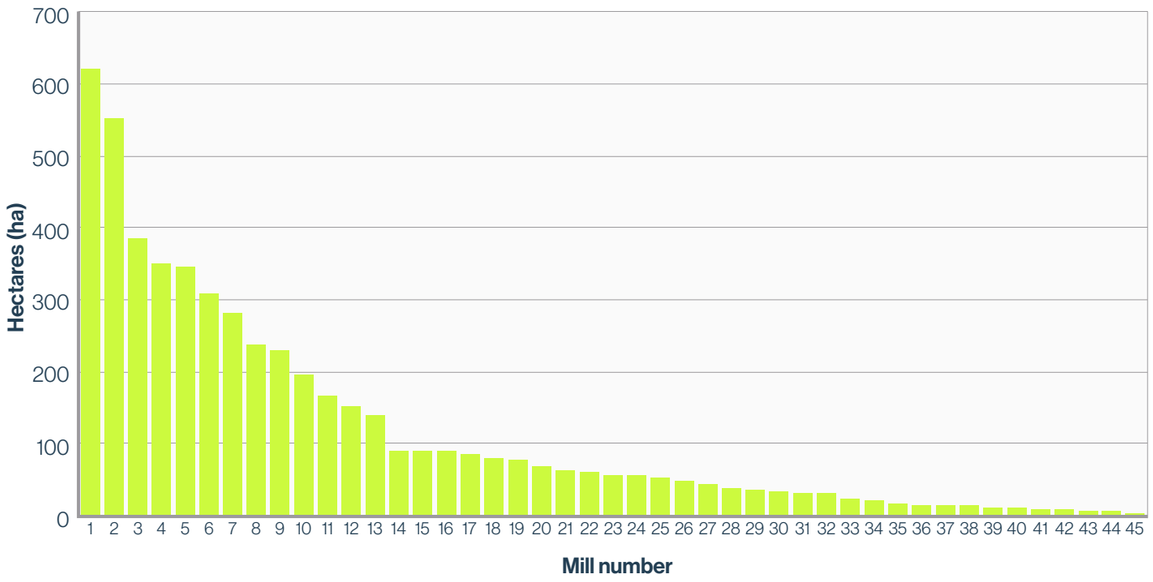
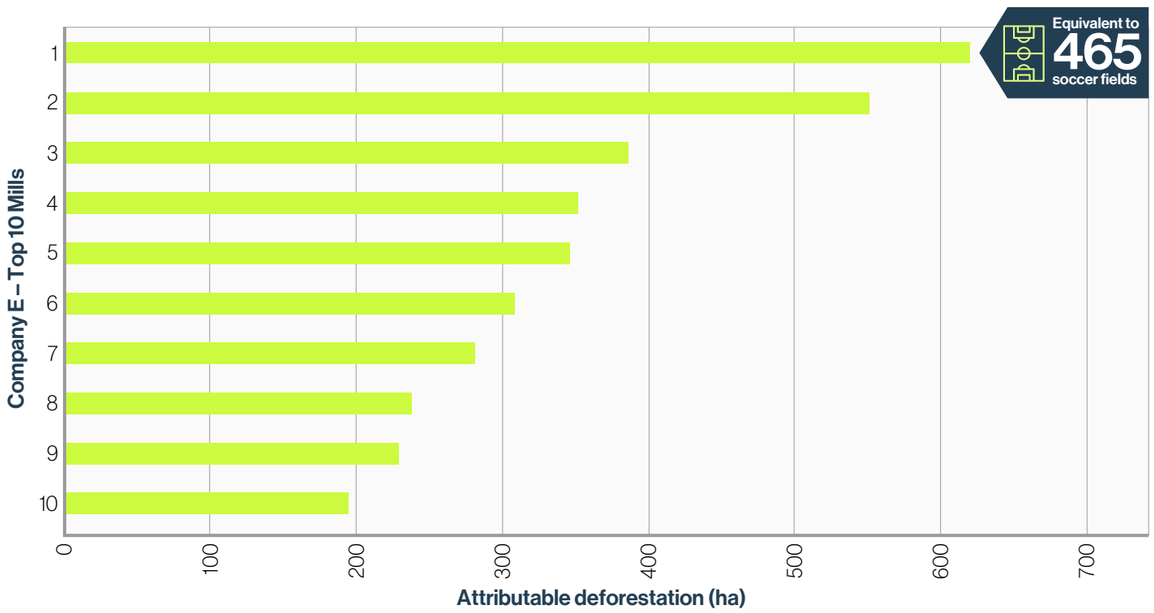


Chart 7.4: Top 10 mills for hectares of attributable deforestation within a 25 km buffer of Company E



COMPANY E

Figure 7.3: Prior to Loss: Green boxes show areas of forest that will be lost to palm oil production within close proximity of a palm oil mill in Indonesia

Figure 7.4: After Loss: Orange boxes show areas of forest lost to palm oil production within close proximity of a palm oil mill in Indonesia. Note additional thinning of forest in the centre of the image, in preparation for further clearance

COMPANY E

Figure 7.5: Prior to Loss: Green boxes show areas of forest that will be lost to palm oil production within immediate proximity of a palm oil plantation (blue) in Malaysia

Figure 7.5: Prior to Loss: Red boxes show areas of forest that will be lost to palm oil production within immediate proximity of a palm oil plantation (green) in Malaysia. (Credit: Planet Labs PBC Inc.)

Figure 7.6: After Loss: Orange boxes show areas of forest lost to palm oil production within immediate proximity of a palm oil plantation (blue box) in Malaysia

7.1.3

COMPANY H

Company H findings

Through the RSPO member portal, a mill list for its palm oil was able to be identified. Of the almost 1500 mills and since the end of 2020 (aligning with the EUDR);

- less than 1% contained no deforestation in their sourcing region which was considered to be within a 25 km buffer of the mill
- 31% had up to 50 ha of deforestation
- 68% had considerable deforestation of over 50 ha ranging up 836 ha.

<1%
contained no deforestation in their sourcing region which was considered to be within a 25 km buffer of the mill

31%
had up to 50 ha of deforestation

68%
had considerable deforestation of over 50 ha ranging up 836 ha

The results of the analysis are displayed in Chart 7.5 and Chart 7.6.

Visual examples of conversion of forest to palm oil within proximity to a sourcing region can be seen in Figures 7.7 and 7.8.

Within Forest IQ, Company H was classed as having high deforestation exposure. This is supported by the satellite-based assessment which identified considerable deforestation within the 25 km sourcing regions of the mills it sources from.

In Forest IQ, Company H is identified as having a zero-gross deforestation commitment with a target date of 2025. The commitment could be interpreted that the Company is actively working to reduce deforestation risk, yet, despite having 12 mills with no deforestation within their sourcing regions since the end of 2020, the majority (68%) of the mills contain between 50 ha and 836 ha of deforestation within their sourcing regions from the satellite-based assessment, suggesting that whilst it has a commitment, Company H is potentially not undertaking sufficient action to manage deforestation. Further, the lack of a commitment cut-off date and absence of reporting on hectares of deforestation suggests that whilst it has a commitment, Company H may not be sufficiently managing its deforestation risks and may represent a material risk to financial institutions.

This information should be raised with Company H to demonstrate the importance of increasing traceability to the plantation level to eliminate the risk of trading in palm oil from deforested land, ensuring that Company H is able to comply with its own upcoming deforestation commitments and employing sufficient measures to manage deforestation and minimise material financial, nature and climate-related risks.

COMPANY H

Chart 7.5: Hectares of deforestation within a 25 km buffer of Company H per mill. Note that 293 mills had less than 20 hectares of deforestation which are not shown on the chart

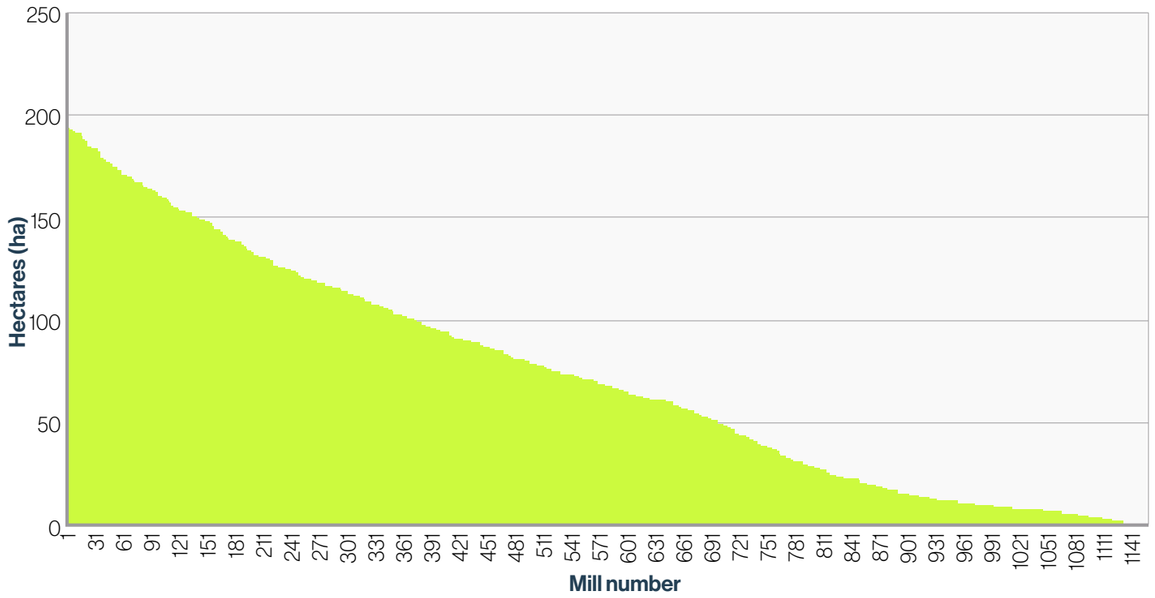
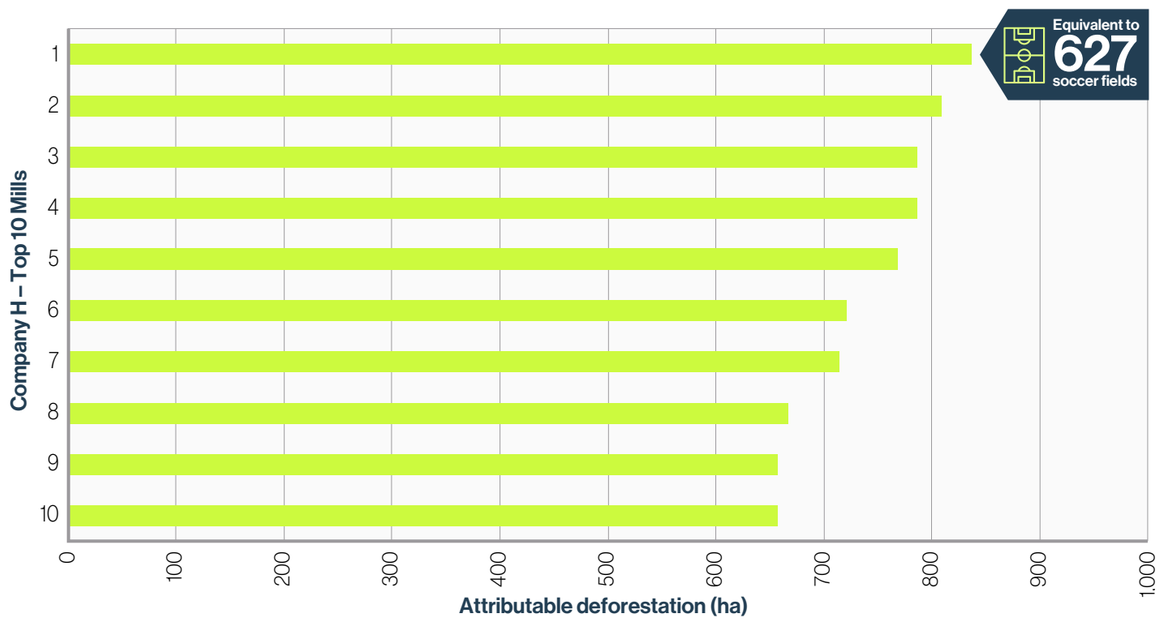


Chart 7.6: Top 10 mills for hectares of attributable deforestation within a 25 km buffer of Company H



COMPANY H

Figure 7.7: Prior to Loss: Green boxes show areas of forest lost to palm oil production within proximity to a palm oil mill in Indonesia

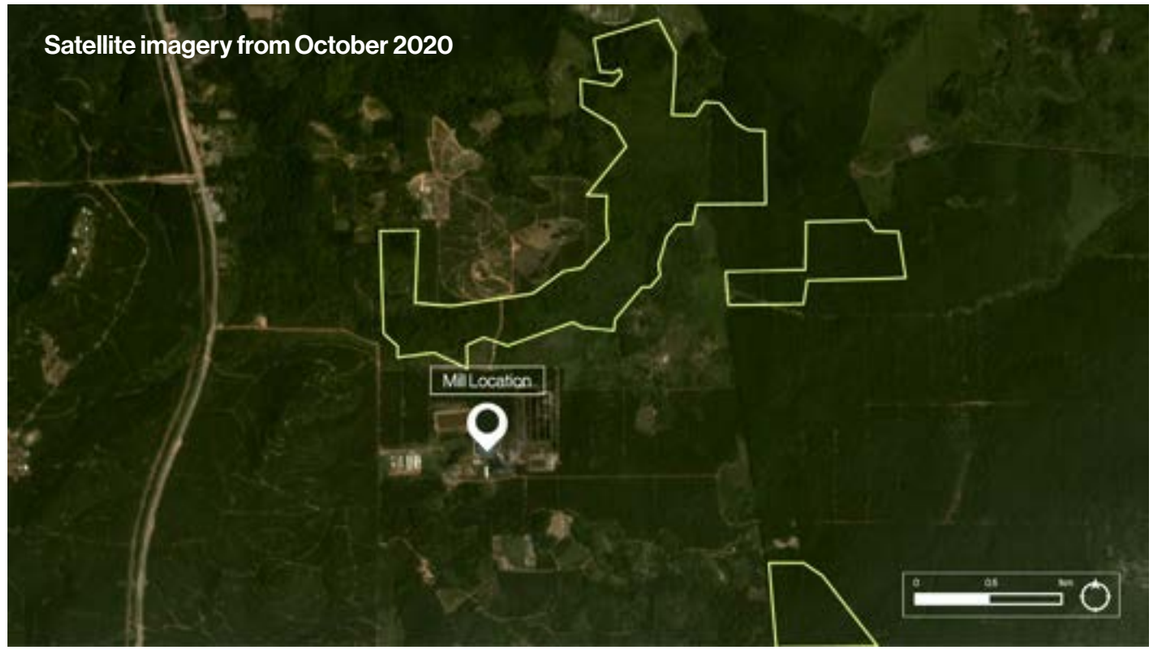
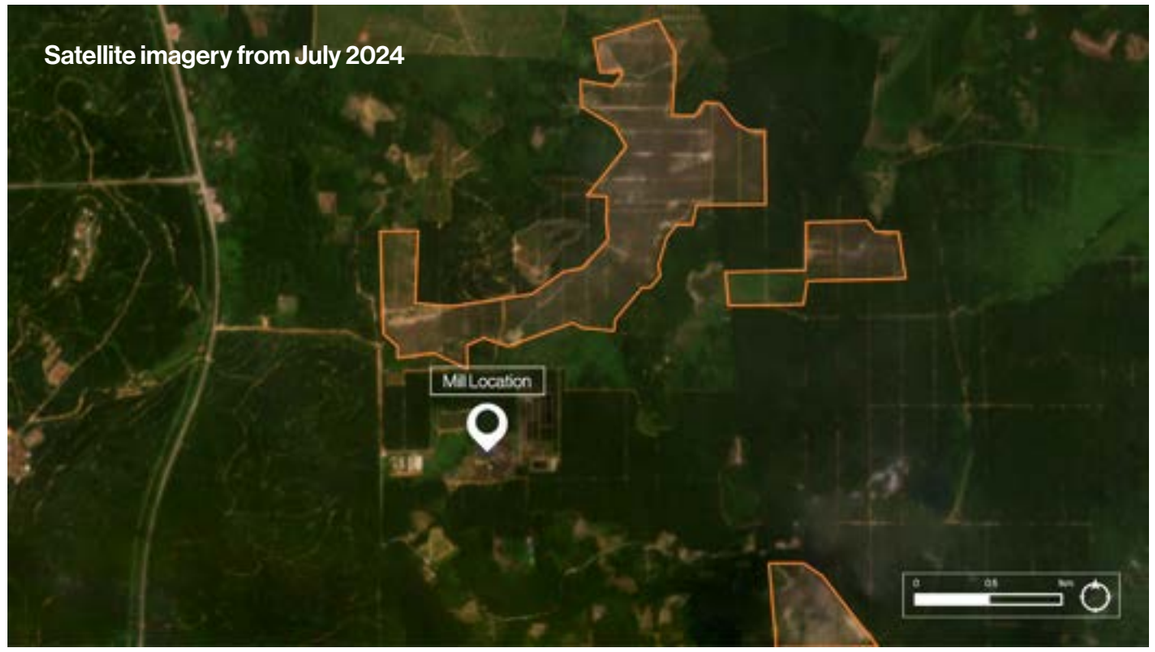


Figure 7.8: After Loss: Orange boxes show areas of forest lost to palm oil production within proximity to a palm oil mill in Indonesia



7.2 Limitations to satellite-based verification

Whilst satellite-based verification of assets is critical, there are a number of limitations to these assessments which primarily relate to wider themes of traceability and transparency. Of most significance to the case studies were the lack of availability of sourcing information for the companies identified and the overlapping sourcing regions of palm oil mills.

7.2.1. Availability of sourcing information

The availability of publicly available sourcing information is extremely limited. Sourcing information was able to be identified from three companies primarily as a result of the push towards greater transparency by the RSPO encouraging members to publish their mill lists. For other industries, there is not the same level of transparency, and therefore no location data could be located.

7.2.2. Completeness of sourcing information

Whilst sourcing data was available for some companies, it is unlikely in all cases that this is the complete list of their sourcing locations. Without the complete list of sourcing locations, there is potential for bias in those locations that the companies make publicly available. For example, they may deliberately select locations with no or lower levels of deforestation.

7.2.3. Overlapping sourcing regions of palm oil mills

The approach to analyse a 25 km buffer of the palm oil mills results in a much more refined set of results for potential deforestation. However, particularly in Southeast Asia, the abundance of palm oil mills in close proximity means that overlapping sourcing regions are very common. This means that being able to directly attribute deforestation to one palm oil mill when it occurs within the sourcing region of multiple palm oil mills is very difficult. This problem is greater when utilising a 50 km buffer which is widely regarded as the norm, however it is still persistent in many of the assessed lists when applying a 25 km buffer. This further emphasises the need for plantation-level traceability for the assessed companies.

Figure 8: Restricted Sourcing Regions Overlapping in SE Asia - Palm Oil Mills with a 25 km buffer

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7.3

Key findings of verification case studies

The satellite-based assessments of the various companies identified the following key findings:

- Of the nine companies selected, only three provide public traceability of their supply chains. Given the importance and general movement towards transparency within the sector, companies that do not publish traceability of their supply chain represent a significant risk to financial institutions. This risk should be considered greater than the risk represented by those companies that publish traceability even when significant deforestation exposure is identified.

- Of the companies that were able to be verified through satellite-based assessments, all had a zero-gross deforestation commitment, and yet significant levels of attributable deforestation were still identified. This indicates that public reporting, accreditations and policies may not reflect reality and therefore external verification of practices via methods such as satellite monitoring is strongly recommended.

- Plantation level traceability is critical for external verification and should be mandatory and where appropriate, publicly available. Without this level of transparency, there is insufficient information to confirm that a company is not sourcing from farms on deforested land, particularly given the extensive deforestation occurring in close proximity to many mills. Financial institutions are encouraged to include traceability requirements into investment and financing agreements.

- Evidence of deforestation within a supply chain or the detection of significant exposure to deforestation risk should be initially managed by investors and commodity aggregators through engagement with the intention of educating and providing support to improve practices. Divestment and defunding should occur if companies are not responsive to engagement efforts.

- Forest IQ is an excellent source of information and a good starting point for identifying high risk companies, but further analysis of the companies is required to sufficiently identify material risks.

Response to findings from the financial institutions

Each of the financial institutions that put forward companies for further verification was provided with the results of the satellite-based verification process. The financial institutions have then utilised the results of the assessment for targeted engagement with each of the companies to gather further insights into their practices and to encourage the companies to strengthen their approaches to deforestation, including traceability and reporting. The companies' response to the engagement efforts will be monitored and their practices will continue to be monitored.

> **“Forest IQ is an excellent source of information and a good starting point for identifying high risk companies.”**

08

Conclusion

Conclusion

Through the evaluation of both the information available in Forest IQ and various financial institutions that make use of the platform, it is clear that the information relating to deforestation, ecosystem conversion and associated human rights abuses is a simple and accessible gateway to initiate efforts towards reporting against the TNFD's LEAP approach.

Further information is required to robustly verify approaches to deforestation, ecosystem conversion and associated human rights abuses

Forest IQ provides an excellent source of information to assist with identifying dependencies, impacts and risks of various companies and sectors. It also provides indicators of the measures each company is taking to address those risks at a policy level.

However, a key limitation of the platform is that the information provided primarily relies on self-reported data, company disclosures and information populated by the company themselves. This leaves room for omission of wrongdoing and may lack standardisation and specificity, particularly relating to deforestation monitoring given commodity supply chains are not transparent. This limitation was highlighted through the findings of the satellite-based assessments which found that, whilst all the companies assessed had zero-gross deforestation commitments, significant levels of attributable deforestation were still identified for each company. Whilst some deforestation exposure is anticipated whilst companies work towards their commitments, the significantly high levels of deforestation exposure detected, combined with commitment dates that have past and commitment dates that are imminent or in the near future, indicate that the companies are not aligned with their commitments as reported in Forest IQ, and that further information is required to robustly verify approaches to deforestation, ecosystem conversion and associated human rights abuses. Financial institutions should also be aware that, despite strong commitments, policies and disclosures, companies may still represent material financial, legal, reputation, climate and nature-related risks.

Appendices

Appendix 1: Method of satellite-based verification approach

To assess deforestation exposure in palm oil production, a widely utilised approach is to apply a buffer of 50 km to a mill to obtain the palm oil plantations which would likely end up being processed at that mill. As palm fruit must be processed within 24 hours of harvest, limiting plantation sourcing to 50 km radius around the mill is a crude but widely used method. The 50 km sourcing region approach is widely used, referenced by the World Resources Institute (Dowell et al., 2015), Sustainable Palm Oil Choice (Traceability & Transparency - Sustainable Palm Oil Choice, 2023) and Colgate Palmolive (Colgate-Palmolive - Palm Oil Forest Footprint, 2021). In order to refine the assessment further and take a more conservative approach, Frontierra applied a 25 km buffer to palm oil mills, which was then analysed for deforestation, thereby focusing on deforestation with the greatest risk of being attributable to a specific mill.

Forest loss was analysed from the end of 2020 to align with the EUDR (EUR-Lex, 2023). The specific conversion of forest to palm oil was focused on, ignoring conversion of forest to mining and other industries.

It is important to note that this style of assessment is not exact, however, by conservatively assessing a 25 km radius and focusing on more recent deforestation, Frontierra still found significant evidence of attributable deforestation in close proximity to the mills.

- **Deforestation for palm oil production**
  For all companies assessed, each palm oil mill's sourcing region was assessed for attributable deforestation, that is deforestation within the conservative 25 km buffer for the mill. For the plantations that were available for assessment, these were made available as PDF maps. The maps were georeferenced and polygons for plantations of a sample of the smallholders were analysed for deforestation both within their boundary and within a 100m buffer of the farm boundary.

- **Comparison with information available on Forest IQ**
  As all companies were listed in the Forest IQ database, data points relating to deforestation were extracted to compare with the findings of the satellite-based assessment for the three companies with publicly available traceability. The key data points from Forest IQ which were focused on in this evaluation were the following.

Where evidence that the findings of the satellite-based assessment did not align with the policies of that company, the financial institutions were informed and were able to take this information and use it in their approaches to active investing by engaging with the companies to seek further information and encourage them to improve their transparency and traceability relating to sourcing information. The information available in Forest IQ was also able to be used to inform an assessment of nature-related risks, opportunities, impacts and dependencies in line with a TNFD assessment.

Table A.1: Forest IQ key data points

Metric	Column Name	Example Data
Metric 1	Deforestation Exposure: Assessment Category and Score/5	Critical (5/5)
Metric 3.1a, Data Point 1	Does the company have a commitment to no deforestation (zero-gross deforestation OR conversion)? And commitment type	Yes, the commitment covers zero-gross deforestation.
Metric 3.1a, Data Point 4	Does the company have a commitment that covers a target date (the date by which the company plans to achieve its deforestation/ conversion commitment)?	Yes, Current/Achieved
Metrics 3.2a, 3.2b, 3.2c	Overall deforestation & human rights actions reporting: Assessment category and Score out of 6	Weak (1.5/6)
Metrics 3.2a, 3.2b, 3.2c	Overall deforestation & human rights actions reporting: Assessment category and Score out of 2	Weak (1.5/2)
Metric 3.2a, Data Point 1c	Does the company report the number of hectares of deforestation/ conversion that have occurred since the commitment cut-off date in its own operations?	No, the company does not report how many hectares of deforestation and/or conversion have occurred in their supply chains since the commitment cut-off date.
Metric 3.2a, Data Point 1a	Does the company report on the total volume of FRCs that is verified deforestation and conversion-free (DCF) & the proportion of total FRC volumes that this represents?	Yes, 1-49%

Appendix 2: References

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